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Ken Sugimoto

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EXAMINER

GODENSCHWAGER, PETER F

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/530,721	Applicant(s) SUGIMOTO ET AL.	
	Examiner PETER F. GODENSCHWAGER	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 16-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/25/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's reply filed April 25, 2008 has been fully considered. Claims 1-7 and 9-12 are amended, claims 13-19 are new, and claims 1-19 are pending.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-15, drawn to an oxygen-absorbing composition, classified in class 252, subclass 188.28.
- II. Claims 13-19, drawn to a method for the production of an oxygen-absorbing composition, classified in class 502, subclass 439.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by a materially different process such as impregnating a carrier that has not been previously dried.

Newly submitted claims 16-19 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 1-15 are drawn to an

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oxygen-absorbing composition, and claims 16-19 are drawn to a method for the production of an oxygen-absorbing composition.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 16-19 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, and 6-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno et al. (US Pat. No. 5,128,060) in view of Mizutami et al. (US Pat. No. 4,226,636).

Regarding Claims 1, 2, 6, 13, and 15: Ueno et al. teaches a an oxygen absorbing composition comprising ascorbic acid (an easily oxidizable compound) and silica gel (a carrier) where the ascorbic acid may be present in 60-10 percent by weight and the silica gel may be present in 5-50 percent by weight (relative ratios that overlap the claimed ranges of 210:100 to 450:100 and 240:100 to 240:450) (2:10-12, 31-32 and 3:65-66). Ueno et al. further teaches that water is added to the ascorbic acid (a composition in liquid form) (3:23-29).

While Ueno et al. does not specifically teach that the carrier is impregnated when dried, the carrier is granulate prepared by granulating and subsequently drying, and the easily

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oxidizable organic composition is in a homogenous liquid form, as this claim is a product-by-process claim, the claim is directed toward the product (See MPEP 2113).

Ueno et al. does not teach a carrier of calcium silicate of the formula:



where m is 1.6-6.5, n is a positive number (and from 1.0-1.5), and the crystal structure has curved plate crystals of gyrolite calcium silicate and amorphous silicon dioxide. However, Mizutani et al. teaches a calcium silicate with a molar ratio of SiO_2/CaO of 1.55 to 6.5 (i.e. $m=1.55$ to 6.5), that is assembled as an assembly of thin rose petal-like flakes (curved plate crystals, corollaceous type crystals, i.e. flower-like) and is composed of gyrolite-type calcium silicate and amorphous silicon dioxide (2:6-10, 18-26, and 3:57-60). Furthermore, Mizutani et al. teaches that the moles of water/CaO is greater than zero, and may be 1.17 (i.e. “n”, of claims 1 and 6, may be greater than 0, and specifically 1.17) (2:5-10, 17:55-65). Ueno et al. and Mizutani et al. are analogous art because they are concerned with the same field of endeavor, namely absorbent materials. At the time of the invention, a person of ordinary skill in the art would have found it obvious to use the calcium silicate of Mizutani et al. with the composition of Ueno et al. and would have been motivated to do so because Mizutani et al. teach that the calcium silicate can replace silica and exhibits superior effects when used as an adsorbent carrier having active ingredients absorbed and fixed thereto (7:62-8:10).

Regarding Claims 7-9: Ueno et al. teach, in addition to the ascorbic acid, the composition further comprising an alkaline compound such as sodium carbonate (an additive working with the ascorbic acid for absorbing oxygen), a reaction accelerator such as ferrous salts, and water (2:43-45, 3:4-10, 23-25).

Regarding Claim 10: Ueno et al. does not teach the specific relative ranges of ascorbic acid, water, alkali compound, and transition metal compound. However, it is well known in the art to change the relative amounts of result effective variables such as ascorbic acid, water, alkali compound, and transition metal compound (See MPEP 2144.05). At the time of the invention, a person of ordinary skill in the art would have found it obvious to change the relative amounts of ascorbic acid, water, alkali compound, and transition metal compound and would have been motivated to do so to optimize the oxygen absorbing effectiveness of the composition as suggested by Ueno et al. (2:31-45, 60-65 and 3:16-22, 35-44).

Regarding Claim 11: Ueno et al. does not teach the specific relative ranges of ascorbic acid, water, and transition metal compound. However, it is well known in the art to change the relative amounts of result effective variables such as ascorbic acid, water, and transition metal compound (See MPEP 2144.05). At the time of the invention, a person of ordinary skill in the art would have found it obvious to change the relative amounts of ascorbic acid, water, and transition metal compound and would have been motivated to do so to optimize the oxygen absorbing effectiveness of the composition as suggested by Ueno et al. (2:31-45, 60-65 and 3:16-22, 35-44).

Regarding Claim 12: Ueno et al. further teaches that the composition can be packed in a bag (packing material) of perforated (gas-permeable) polyethylene film (6:35-41).

Regarding Claim 14: Ueno et al. further teaches that the silica gel/carrier particles have a size up to 1000 μm (3:50-51 and Table 6), overlapping the range of greater than 100 μm .

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Claims 1, 3-5, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugihara et al. (US Pat. No. 5,102,673) in view of Mizutani et al. (US Pat. No. 4,226,636) and Ueno et al. (US Pat. No. 5,128,060).

Regarding Claims 1 and 12: Sugihara et al. teaches a granulated oxygen absorbing material with a carrier that can be incorporated in a permeable packing material (3: 1-10, and 4:33-35, 51-52).

Sugihara et al. does not teach where the composition comprises an easily oxidizable organic composition. However, Ueno et al. teaches the use of ascorbic acid present in 60-10 percent by weight and silica gel (a carrier) present in 5-50 percent by weight (relative ratios that overlap the claimed ranges of 210:100 to 450:100 (2:10-12, 31-32 and 3:65-66). Sugihara et al. and Ueno et al. are analogous art because they are concerned with the same field of endeavor, namely oxygen absorbing compositions for packaging. At the time of the invention, a person of ordinary skill in the art would have found it obvious to use the ascorbic acid composition of Ueno et al. in the composition of Sugihara et al. and would have been motivated to do so because ascorbic acid is safer than the boron compounds of Sugihara et al. and would be more suitable for food packaging.

Sugihara et al. does not teach a carrier of calcium silicate of the formula:



where m is 1.6-6.5, n is a positive number (and from 1.0-1.5), and the crystal structure has curved plate crystals of gyrolite calcium silicate and amorphous silicon dioxide. However,

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Mizutani et al. teaches a calcium silicate with a molar ratio of SiO_2/CaO of 1.55 to 6.5 (i.e. $m=1.55$ to 6.5), that is assembled as thin rose petal-like flakes (curved plate crystals) and is composed of gyrolite-type calcium silicate and amorphous silicon dioxide (2:6-10, 18-26, and 3:57-60). Furthermore, Mizutani et al. teaches that the moles of water/CaO is greater than zero, and may be 1.17 (i.e. “n”, of claims 1 and 6, may be greater than 0, and specifically 1.17) (2:5-10, 17:55-65). Sugihara et al. and Mizutani et al. are analogous art because they are concerned with the same field of endeavor, namely absorbent materials. At the time of the invention, a person of ordinary skill in the art would have found it obvious to use the calcium silicate of Mizutani et al. with the composition of Sugihara et al. and would have been motivated to do so because Mizutani et al. teach that the calcium silicate can replace carriers such as silica and exhibits superior effects when used as an adsorbent carrier having active ingredients absorbed and fixed thereto (7:62-8:10). Furthermore, Sugihara et al. teaches that calcium silicate may be used as the carrier (3:55).

While Sugihara et al. in view of Ueno et al. and Mizutani et al. do not specifically teach that the carrier is impregnated when dried, as this claim is a product-by-process claim, the claim is directed toward the product (See MPEP 2113).

Regarding Claims 3 and 5: Sugihara et al. further teach that the carrier may be used in combination with a binder such as polyacrylic acid and polyvinyl alcohol for granulation (4:50-60).

Sugihara et al. does not teach the relative ratios of binder and carrier. However, it is well known in the art to change the relative amounts of result effective variables such as binder and carrier (See MPEP 2144.05). At the time of the invention, a person of ordinary skill in the art

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would have found it obvious to optimize the relative amounts of binder and carrier and would have been motivated to do so to optimize the oxygen absorbing capacity and flowability of the composition.

Regarding Claim 4: Sugihara et al. further teach that the carrier may be a combination that includes activated carbon (3:52-60).

Sugihara et al. does not teach the relative ratios of binder, and carriers. However, it is well known in the art to change the relative amounts of result effective variables such as binder and carriers (See MPEP 2144.05). At the time of the invention, a person of ordinary skill in the art would have found it obvious to optimize the relative amounts of binder and carrier and would have been motivated to do so to optimize the oxygen absorbing capacity and flowability of the composition.

Response to Amendment

The declaration under 37 CFR 1.132 filed April 25, 2008 is insufficient to overcome the rejection of claims 1-12 based upon Ueno et al. in view of Mizutami et al. or Sugihara et al. in view of Mizutani et al. and Ueno et al. as set forth in the last Office action because: the showing is not commensurate in scope with the claims. It is not clear how the compactness of the composition relates to the limitations of the claims.

Response to Arguments

Applicant's arguments filed April 25, 2008 have been fully considered but they are not persuasive.

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Regarding Applicant's arguments that the references of record do not contain the process limitations in the product claims, as the claim are product-by-process claims, the claims are directed toward the product (See MPEP 2113).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The combined teachings of Ueno et al. and Mitzutani et al. would have suggested to one of ordinary skill in the art to use the calcium silicate of Mitzutani et al. in the composition of Ueno et al., as Mitzutani et al. teaches that the calcium silicate has "superior effects when used as adsorbant carriers having active ingredients adsorbed and fixed thereto" (8:4-8).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER F. GODENSCHWAGER whose telephone number is (571)270-3302. The examiner can normally be reached on Monday-Friday 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo, Ph.D./
Supervisory Patent Examiner, Art Unit 1796
1-Aug-08

PFG
July 28, 2008